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CLAIMS:

What is claimed is:

- 1 1. A method in a tape drive system for controlling tape
2 movement, the method comprising the tape drive system
3 implemented steps of:
4 determining a direction of tape movement of a tape
5 with respect to a file reel and a machine reel;
6 if the direction of tape movement is toward the file
7 reel, moving the tape using machine reel control; and
8 if the direction of tape movement is toward the
9 machine reel, moving the tape using file reel control.
- 1 2. The method of claim 1, wherein the determining step
2 comprises:
3 receiving data from a first tachometer associated
4 with the file reel and receiving data from a second
5 tachometer associated with the machine reel.
- 1 3. The method of claim 1, wherein the machine reel
2 control causes the tape movement to push the tape towards
3 file reel.
- 1 4. The method of claim 1, wherein the file reel control
2 causes the tape movement to push the tape towards machine
3 reel.

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1 5. A tape drive apparatus comprising:
2 a tape head, wherein the tape head accesses data on
3 a magnetic tape placed within the tape apparatus, wherein
4 the magnetic tape is moveable between a first reel and a
5 second reel;
6 a first motor, wherein the first motor rotates the
7 first reel;
8 a first tachometer, wherein the first tachometer
9 generates first data with respect to rotation of the
10 first reel;
11 a second motor, wherein the second motor rotates the
12 second reel;
13 a second tachometer, wherein the second tachometer
14 generates second data with respect to rotation of the
15 second reel; and
16 a controller, wherein the controller is connected to
17 the first tachometer, the second tachometer, the first
18 motor, and the second motor, and wherein the controller
19 controls movement of the magnetic tape by using the first
20 data if the tape is being moved in a direction from the
21 first reel to the second reel and using the second data
22 if the tape is being moved in a direction from the second
23 reel to the first reel.

1 6. The tape drive apparatus of claim 5, wherein the
2 controller is a processor.

1 7. The tape drive apparatus of claim 5, wherein the
2 controller is a digital signal processor.

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1 8. The tape drive apparatus of claim 5, wherein first
2 reel is a file reel and the second reel is machine reel.

1 9. The tape drive apparatus of claim 5, wherein the
2 first tachometer is a first encoder and the second
3 tachometer is a second encoder.

1 10. The tape drive apparatus of claim 5, wherein the
2 first motor is connected to the controller through a
3 first amplifier and the second motor is connected to the
4 controller by a second amplifier.

1 11. The tape drive apparatus of claim 5, wherein the
2 tape head is a read/write head.

1 12. The tape drive apparatus of claim 5, wherein the
2 controller controls position of the tape by sending
3 signals to the first motor when the first data is used.

1 13. The tape drive apparatus of claim 5, wherein the
2 controller controls position of the tape by sending
3 signals to the second motor when the second data is used.

1 14. A tape drive system for controlling tape movement,
2 the tape drive system comprising:
3 determining means for determining a direction of
4 tape movement of a tape with respect to a file reel and a
5 machine reel;

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6 first moving means for moving the tape using machine
7 reel control if the direction of tape movement is toward
8 the file reel; and

9 second moving means for moving the tape using file
10 reel control if the direction of tape movement is toward
11 the machine reel.

1 15. The tape drive system of method of claim 14, wherein
2 the determining means comprises:

3 receiving means for receiving data from a first
4 tachometer associated with the file reel and receiving
5 data from a second tachometer associated with the machine
6 reel.

1 16. The tape drive of claim 15, wherein pulling of tape
2 onto the machine control reel from the file control reel
3 takes place when the tape on the machine control reel has
4 a radius less than one half a maximum reel radius for the
5 machine control reel.

1 17. The tape drive of claim 15, wherein pushing of tape
2 out of the machine control reel to the file control reel
3 takes place when the tape on the machine control reel has
4 a radius less than one half a maximum reel radius for the
5 machine control reel.

1 18. The tape drive of claim 15, wherein pulling of tape
2 onto the file control reel from the machine control reel
3 takes place when the tape on the file control reel has a

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4 radius less than or equal to one half a maximum reel
5 radius for the file control reel.

1 19. The tape drive of claim 15, wherein pushing of tape
2 out of the file control reel to the machine control reel
3 takes place when the tape on the file control reel has a
4 radius less than or equal to one half a maximum reel
5 radius for the file control reel.

1 20. The tape drive system of claim 14, wherein the
2 machine reel control causes the tape movement to push the
3 tape towards file reel.

1 21. The tape drive system of claim 14, wherein the file
2 reel control causes the tape movement to push the tape
3 towards machine reel.

1 22. A computer program product in a computer readable
2 medium for controlling tape movement in a tape drive
3 system, the computer program product comprising:

4 first instructions for determining a direction of
5 tape movement of a tape with respect to a file reel and a
6 machine reel;

7 second instructions for moving the tape using
8 machine reel control if the direction of tape movement is
9 toward the file reel; and

10 third instructions for moving the tape using file
11 reel control if the direction of tape movement is toward
12 the machine reel.

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1 23. A tape drive system for controlling tape movement,
2 the tape drive system comprising:
3 determining means for determining a radius of a file
4 reel and a radius of a machine reel;
5 first moving means for moving the tape using machine
6 reel control if the radius of the machine reel is less
7 than the radius of the file reel; and
8 second moving means for moving the tape using file
9 reel control if the radius of the file reel is less than
10 or equal to the radius of the machine reel.

1 24. The tape drive of claim 23, wherein pulling of tape
2 onto the machine control reel from the file control reel
3 takes place when the tape on the machine control reel has
4 a radius less than one half a maximum reel radius for the
5 machine control reel.

1 25. The tape drive of claim 23, wherein pushing of tape
2 out of the machine control reel to the file control reel
3 takes place when the tape on the machine control reel has
4 a radius less than one half a maximum reel radius for the
5 machine control reel.

1 26. The tape drive of claim 23, wherein pulling of tape
2 onto the file control reel from the machine control reel
3 takes place when the tape on the file control reel has a
4 radius less than or equal to one half a maximum reel
5 radius for the file control reel.

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1 27. The tape drive of claim 23, wherein pushing of tape
2 out of the file control reel to the machine control reel
3 takes place when the tape on the file control reel has a
4 radius less than or equal to one half a maximum reel
5 radius for the file control reel.

1 28. A computer program product in a computer readable
2 medium for controlling tape movement in a tape drive
3 system, the computer program product comprising:
4 first instructions for determining a radius of file
5 reel and a radius of machine reel;
6 second instructions for moving the tape using
7 machine reel control if the radius of the machine reel is
8 less than the radius of the file reel; and
9 third instructions for moving the tape using file
10 reel control if the radius of the file reel is less than
11 or equal to the radius of the machine reel.